

Water Quality Task Force: Building Climate Resiliency on a Watershed Scale

**MaryJo Gingras, County Conservationist
Ashland County Land & Water Conservation Department**

September 5, 2019

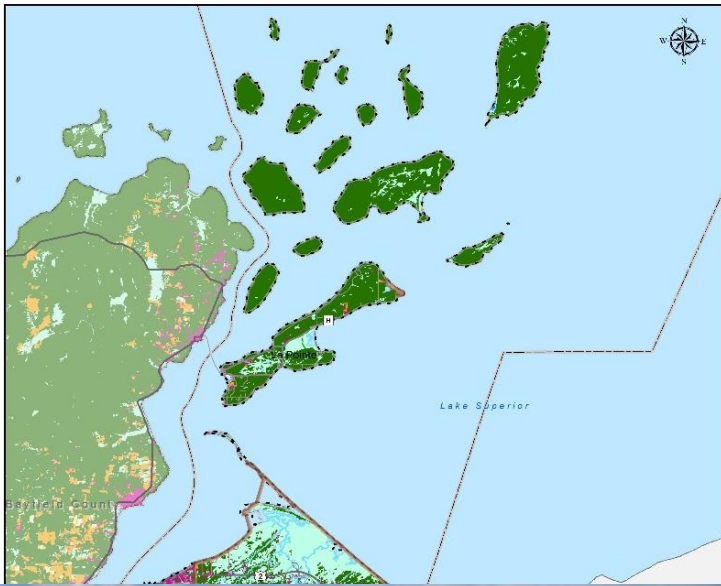


Resource Rich

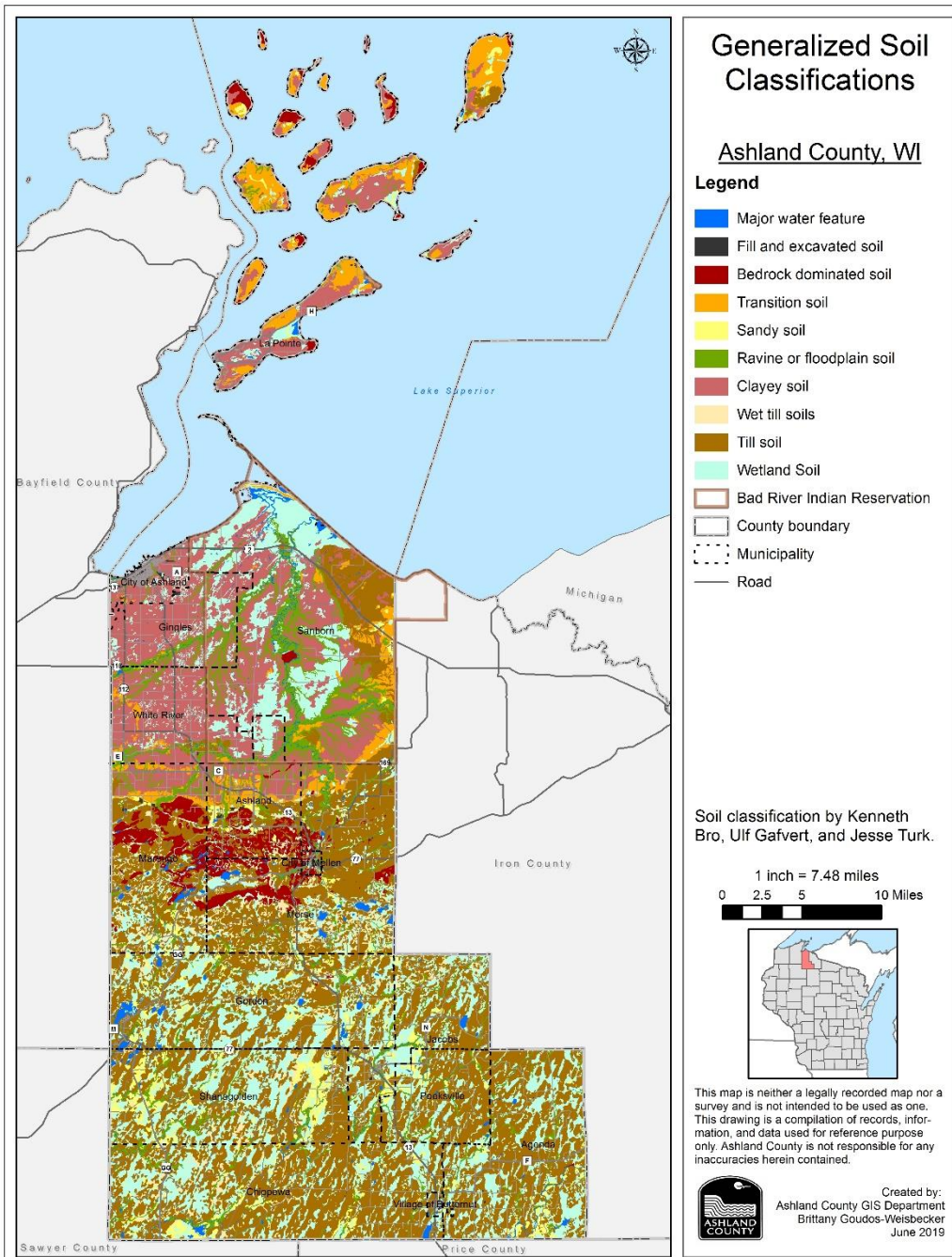
- 1440+ lakes
- 2800+ stream miles
- 1132 mi. trout waters
- Rare coastal wetlands

Ashland County:

- 17 of 21 Apostle Islands
- 41 ORW/ERW listings
- 45% N border=wetland
- Kakagon/Bad River RAMSAR
- Two distinct drainages



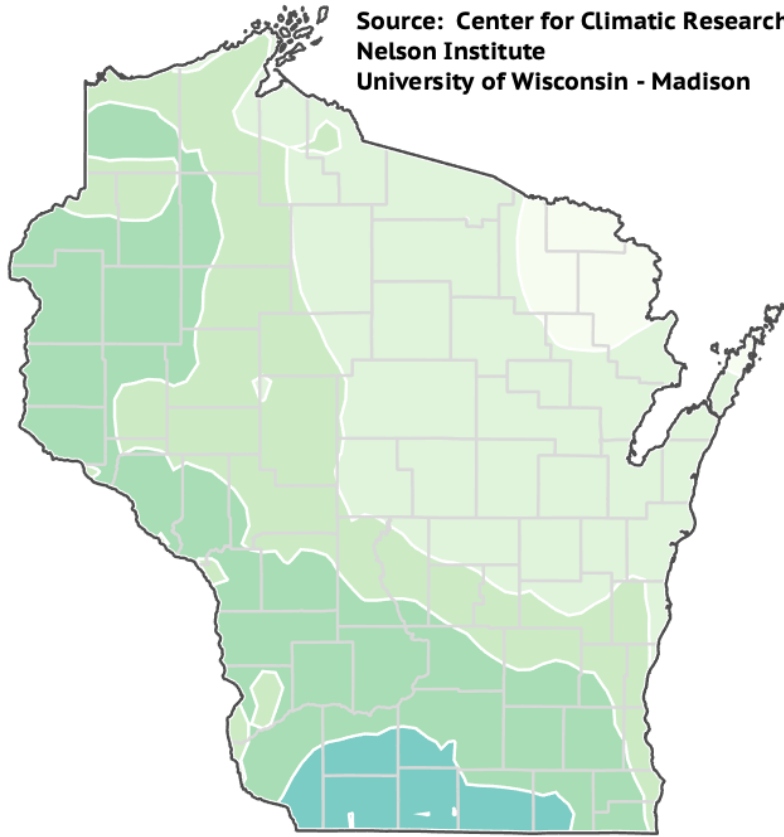
Glacial Soils



- Glacial origins
- Coastal plain= clay soils
- Poor drainage
- Penokee Range
- Lowlands= sand/gravel
- North Central Forest
- "Transition zone"
- Historic Land Cover

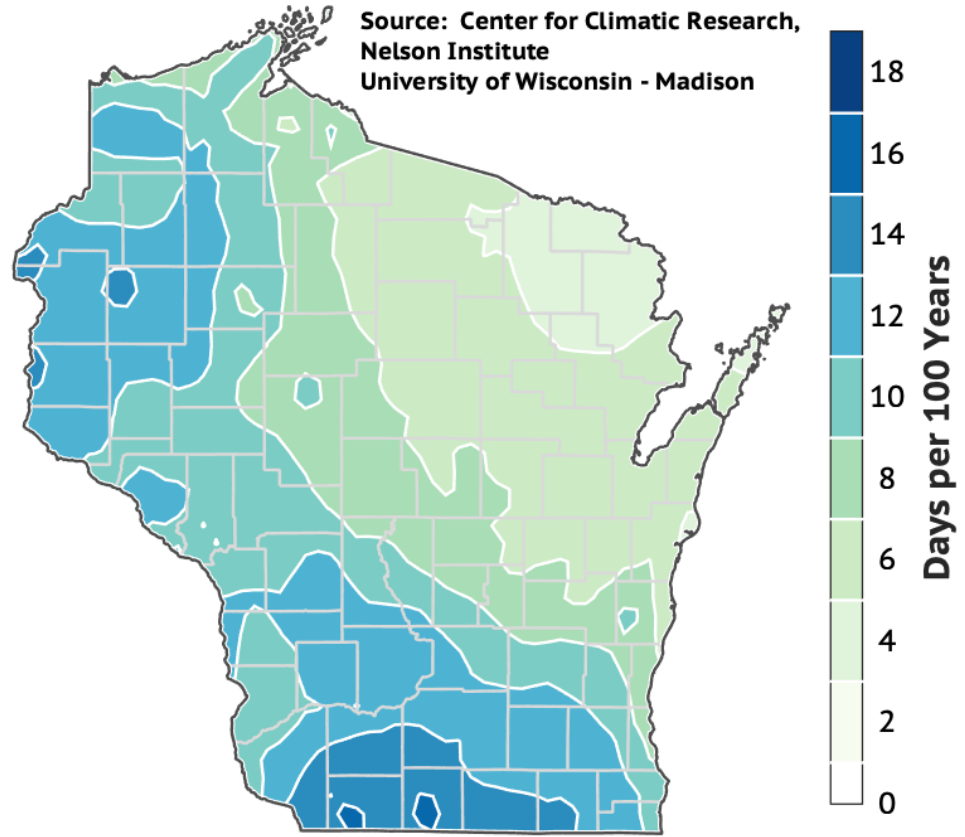
Days per 100 Years with PRCPDays > 4in 1981-2010 Conditions (HISTORICAL)

Source: Center for Climatic Research,
Nelson Institute
University of Wisconsin - Madison



Days per 100 Years with PRCPDays > 4in 2041-2060 Conditions (RCP45)

Source: Center for Climatic Research,
Nelson Institute
University of Wisconsin - Madison



- Temp. \uparrow 2-9° by 2100
- Spring precip. \uparrow 1-3"
- Summer moisture stress
- Forest stress; insects

June 2016



Recommendations



- * Climate Adaptability & Flood Mitigation (AB266, SB252) – Demonstration Project
- * Groundwater Monitoring & Well Testing
- 1. SUSTAINED Land and Water Conservation Department staff funding of three staff per county cost shared at 100, 70, and 50% rates per s. 92.14 Wis. Stats.
- 2. Development of programs & funding for watershed-scale hydrologic restoration.
- 3. Expand groundwater monitoring & assistance to well owners of contamination.

Douglas County Land and Water Conservation Department

Ashley Vande Voort

Douglas County Land and Water Conservationist

Ashley.VandeVoort@douglascountywi.org

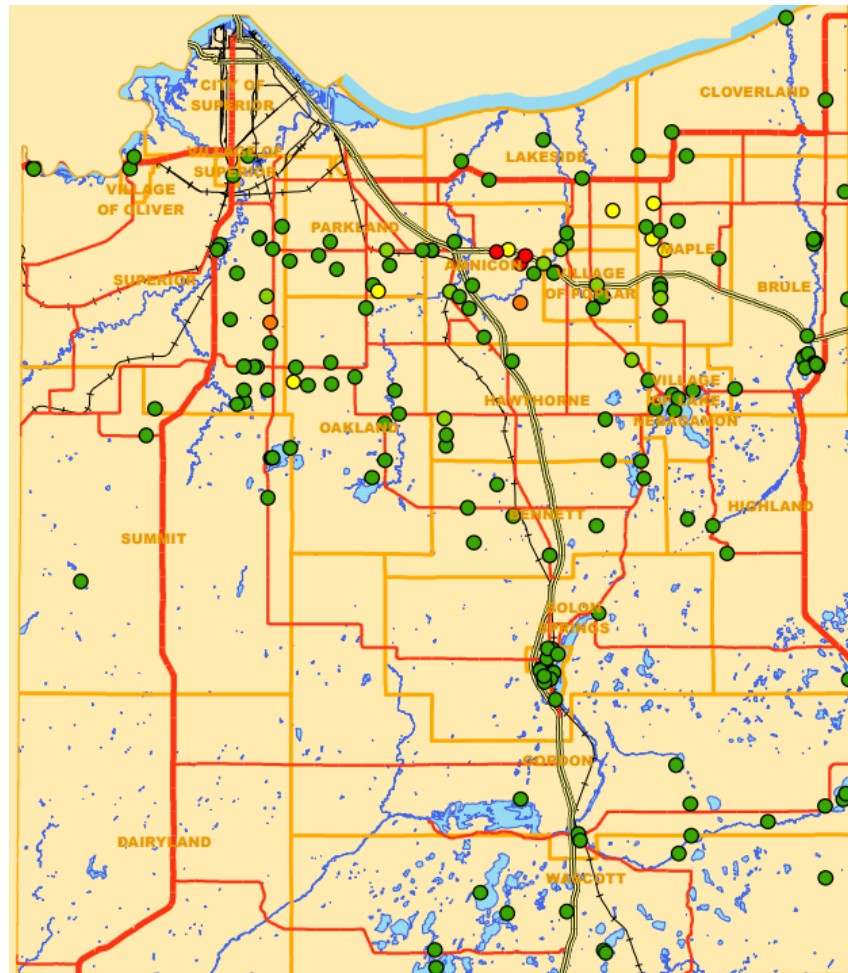
Douglas County LWCD Well Sampling

- 2017- acquired Wisconsin Coastal Management Grant
- 2018 and 2019- Douglas County Capital Project Funds
 - Valued program, but funding is unreliable



Threats to Groundwater

- Naturally occurring contaminants
 - Arsenic



Arsenic

Arsenic is a carcinogen that occurs naturally in Douglas County. Long term exposure can increase the risk of developing various types of cancers.

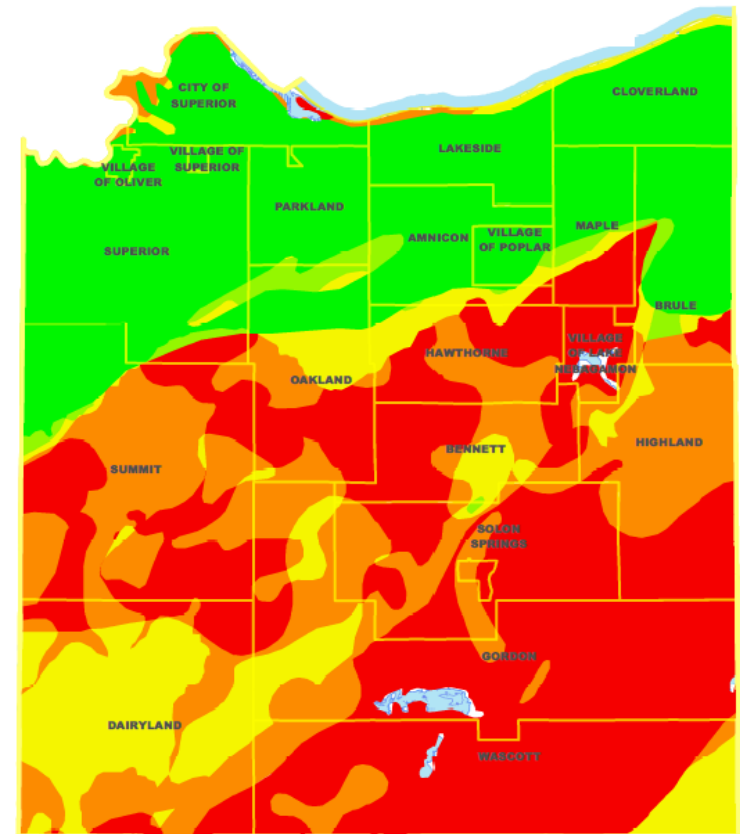
The US EPA Maximum Contaminant Level for Arsenic is 0.010 mg/L.

Arsenic (mg/L)

- 0.005
- 0.005 - 0.006
- 0.006 - 0.008
- 0.008 - 0.010
- 0.010 - 0.013

Threats to Groundwater

- Septic systems
- Unused wells
- Future land use
- Flooding



Source: Groundwater Contamination Susceptibility Model, Wisconsin DNR, US Geological Survey, Wisconsin Geological & Natural History Survey, and UW Madison.

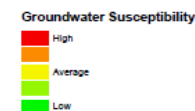
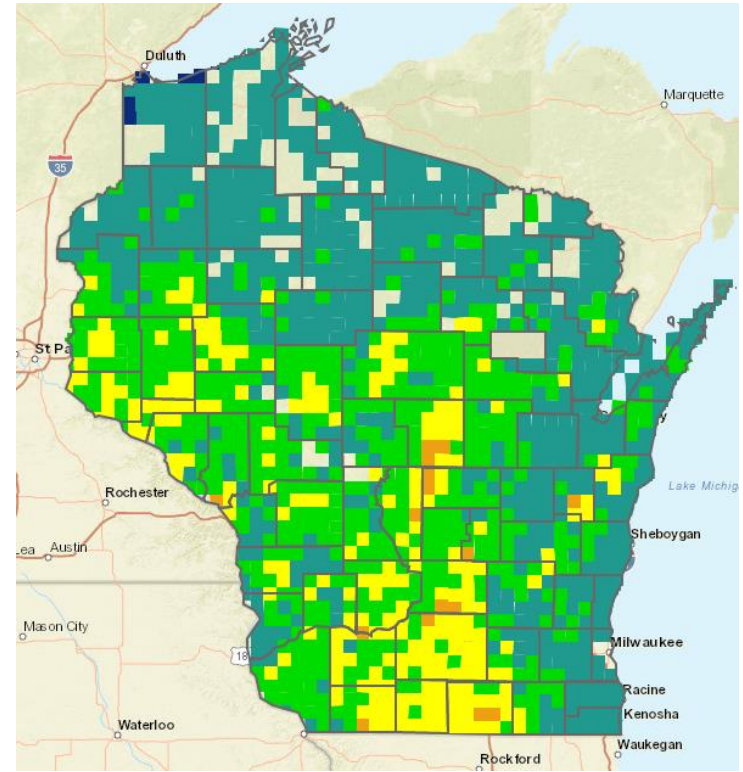


Figure 10 - Groundwater Contaminataion Susceptibility

Solutions- Protection!

- Education and funding for well sampling
- Expand well compensation program
- Regulation to protect areas sensitive to groundwater contamination
 - Funding for County Conservation can achieve these goals

Nitrate



https://gissrv3.uwsp.edu/webapps/gwc/pri_wells/



University of Wisconsin-Stevens Point
College of Natural Resources

UW
Extension
University of Wisconsin-Extension



NORTHWEST WISCONSIN GROUNDWATER MONITORING PROJECT

SPEAKER'S TASK FORCE ON WATER QUALITY

KELSEY PRIHODA, RESEARCHER

LAKE SUPERIOR RESEARCH INSTITUTE, UNIVERSITY OF
WISCONSIN-SUPERIOR

The arguments for and against mining in the Penokee Hills

By Shawn Johnson / Wisconsin Public Radio Feb 21, 2013 0



An aerial view of the Penokee Hills area where a taconite mine would be located. Photo by Peter Rasmussen, Moving Water Photography.

Courtesy of Peter Rasmussen, Moving Water Photography

Wisconsin frac sand industry roars back, but new competition looms

CHRIS HUBBUCH La Crosse Tribune Mar 19, 2018 2 5 min to read

GET 90% OFF DIGITAL PLUS



An Iowa Corn is planning to build a \$20 million large-scale farm for up to 20,000 hogs in northern Wisconsin.

The concentrated animal feeding operation (CAFO) would be located in the town of Trade Lake in Burnett County near a state wildlife area and tributary of the St. Croix River.

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OBJECTIVES

INCREASE PUBLIC KNOWLEDGE REGARDING GROUNDWATER QUALITY:

1. MONITOR NATURALLY-OCCURRING FLUORIDE CONCENTRATION IN GROUNDWATER SAMPLES COLLECTED FROM 11 COUNTIES IN NORTHWESTERN WISCONSIN, AND DETERMINE CONCENTRATIONS OF ARSENIC, IRON, MANGANESE, ALUMINUM, AND LEAD IN A SUBSET OF THESE SAMPLES.
2. FOSTER PUBLIC AWARENESS AMONG NORTHWESTERN WISCONSIN RESIDENTS ABOUT THE NEED FOR REGULAR PRIVATE WELL WATER TESTING, AND INCREASE PUBLICALLY-AVAILABLE GROUNDWATER DATA.

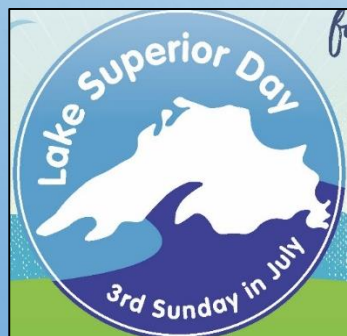
Town of Morse



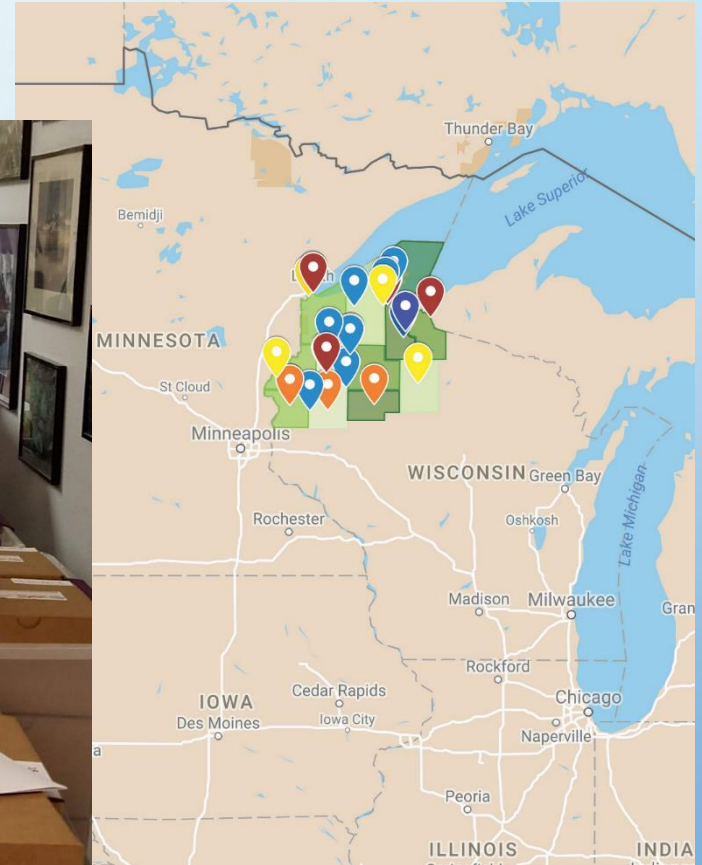
Burnett County Agricultural Society Fair



BARRON COUNTY
Wisconsin



IMPLEMENTATION



PRELIMINARY RESULTS

Parameter	MCL (NR Ch. 140)	Minimum	Maximum
Fluoride	4.00 mg/L	<0.015 mg/L	2.02 mg/L
Iron	0.30 mg/L	<0.025 mg/L	4.40 mg/L
Manganese	0.30 mg/L	<0.0066 mg/L	0.57 mg/L
Aluminum	0.200 mg/L	<0.0016 mg/L	0.0439 mg/L
Arsenic	0.010 mg/L	<0.00035 mg/L	0.0100 mg/L
Lead	0.015 mg/L	<0.00054 mg/L	0.0181 mg/L



LOOKING TO THE FUTURE

- TARGETED SAMPLING IN AREAS WITH CONTAMINANT-LEVEL VALUES
 - ADDITIONAL METALS SAMPLE KITS
 - EMERGING CONTAMINANTS OF CONCERN
 - PUBLIC DATABASE FOR NORTHWESTERN WISCONSIN
- 